DRAFT ENVIRONMENTAL ASSESSMENT
for the proposed
TLC Landscape and Excavation, Inc.
Land Application Sites
Manhattan, Montana

Solid Waste Section
PO Box 200901
Helena, MT 59620-0901

November 25, 2020

TABLE OF CONTENTS

TABLES

FIGURES

ACRONYMS

TLC - TLC Landscape & Excavation, Inc.

ARM – Administrative Rules of Montana

AAR– Annual Application Rate

Draft EA – Draft version of an environmental assessment before public comment

DEQ – Montana Department of Environmental Quality

DNRC – Montana Department of Natural Resources and Conservation

EA – Environmental Assessment

EIS – Environmental Impact Statement

GWIC – Ground Water Information Center

MBMG – Montana Bureau of Mines and Geology

MCA – Montana Code Annotated

MEPA – Montana Environmental Policy Act

MNHP – Montana Natural Heritage Program

O&M – Operation and Maintenance

Proposed Action – Approving new septage land application sites

Septic Rules – ARM Title 17, chapter 50, subchapter 8, "Cesspool, Septic Tank, and Privy Cleaners"

SDLA – "Septic Disposal Licensure Act", Title 75, chapter 10, part 12, MCA

Site 1 – Approximately 70 acres of Vander Molen property located approximately seven miles south of Manhattan in Gallatin County, Montana, on the corner of Amsterdam Road and Camp Creek Road.

Site 2 – Approximately 100 acres of Vander Molen property located approximately 10 miles south of Manhattan in Gallatin County, Montana, at 9363 Camp Creek Road.

SWL – Static Water Levels

USFWS – United States Fish and Wildlife Service

USGS – United States Geological Survey

1. NEED FOR PROPOSED ACTION

1.1 SUMMARY

This draft environmental assessment (Draft EA) was prepared for licensing the septage land application sites proposed by TLC Landscape and Excavation, Inc. (TLC), in accordance with the Montana Environmental Policy Act (MEPA). On May 25, 2017, the Department of Environmental Quality (DEQ) received an application from TLC for approval of the following two new septage land application sites (Proposed Action):

1. Approximately 70 acres of Vander Molen property located approximately seven miles south of Manhattan in Gallatin County, Montana, on the corner of Amsterdam Road and Camp Creek Road (Site 1, **Figure 1**); and
2. Approximately 100 acres of Vander Molen property located approximately 10 miles south of Manhattan in Gallatin County, Montana, at 9363 Camp Creek Road (Site 2, **Figure 2**).

1.2 BACKGROUND

In December 2003, TLC obtained a DEQ license to pump and dispose of septage in Montana. TLC is currently licensed to land apply septage on other land application sites in Gallatin County. TLC is proposing to add Site 1 and Site 2 (Sites) to their license. Both Sites are on private property.

Septage is the liquid and solid material removed from a septic tank, cesspool, portable toilet, or similar treatment works that only receive domestic waste and wastewater collected from household or commercial operations. As Montana's population or seasonal visitation grow, the demand for disposal of septage increases. Wastewater treatment plants can accept only limited amounts of septage from pumpers. Land application by pumpers allows for safe disposal of septage without overloading Montana's wastewater treatment plants. Land application also reduces Montana's farmer's reliance on chemical fertilizers to improve soil. TLC's application was submitted to DEQ under the laws and rules for licensing septic pumpers, demonstrating their intent to meet the minimum requirements for the pumping and land application of septage.

When properly managed, land application of septage is a beneficial resource, providing economic and environmental benefits with no adverse public health effects. A licensed land application program recognizes and employs practices that maximize those benefits. Septage does not include prohibited material (*e.g.*, garbage or tampons) removed from a septic tank or similar treatment works by pumping.

1.3 PURPOSE AND NEED

DEQ must conduct an environmental review on TLC's application by evaluating potential impacts of the Proposed Action. If DEQ approves the application, DEQ would add the Sites to TLC's existing license. DEQ's decision to approve or deny the application depends upon the consistency of the application with the following:

1. Septage Disposal Licensure Act (SDLA);
2. Administrative Rules of Montana (ARM) Title 17, chapter 50, subchapter 8, "Cesspool, Septic Tank, and Privy Cleaners" (Septic Rules);
3. Clean Air Act of Montana; and

4. Montana Water Quality Act.

1.4 LOCATION DESCRIPTION AND STUDY AREA

The Sites are proposed in the Three Forks valley on property located west of Bozeman and south of Manhattan (**Figure 4**).

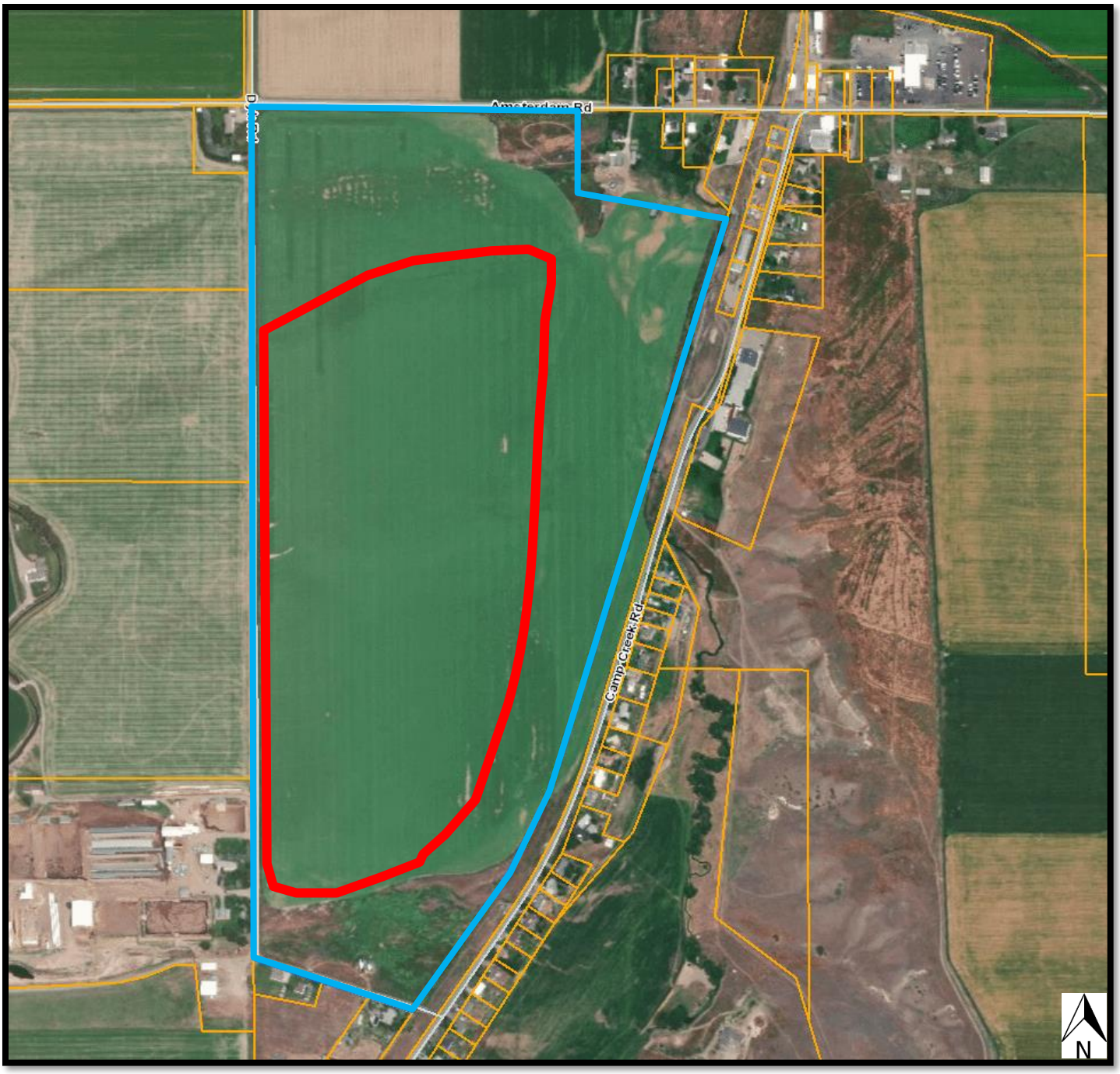
Site 1 is in Section 14, Township 1 South, Range 3 East.

Site 2 is in Section 28, Township 1 South, Range 3 East.

The Sites would be accessed by private driveways. The study areas encompass property that surrounds each site (**Figures 1, 2, 3, and 4**). Study areas depend upon the resource under evaluation, as noted in the subparts of *Section 3*.

Figure 1: Site 1

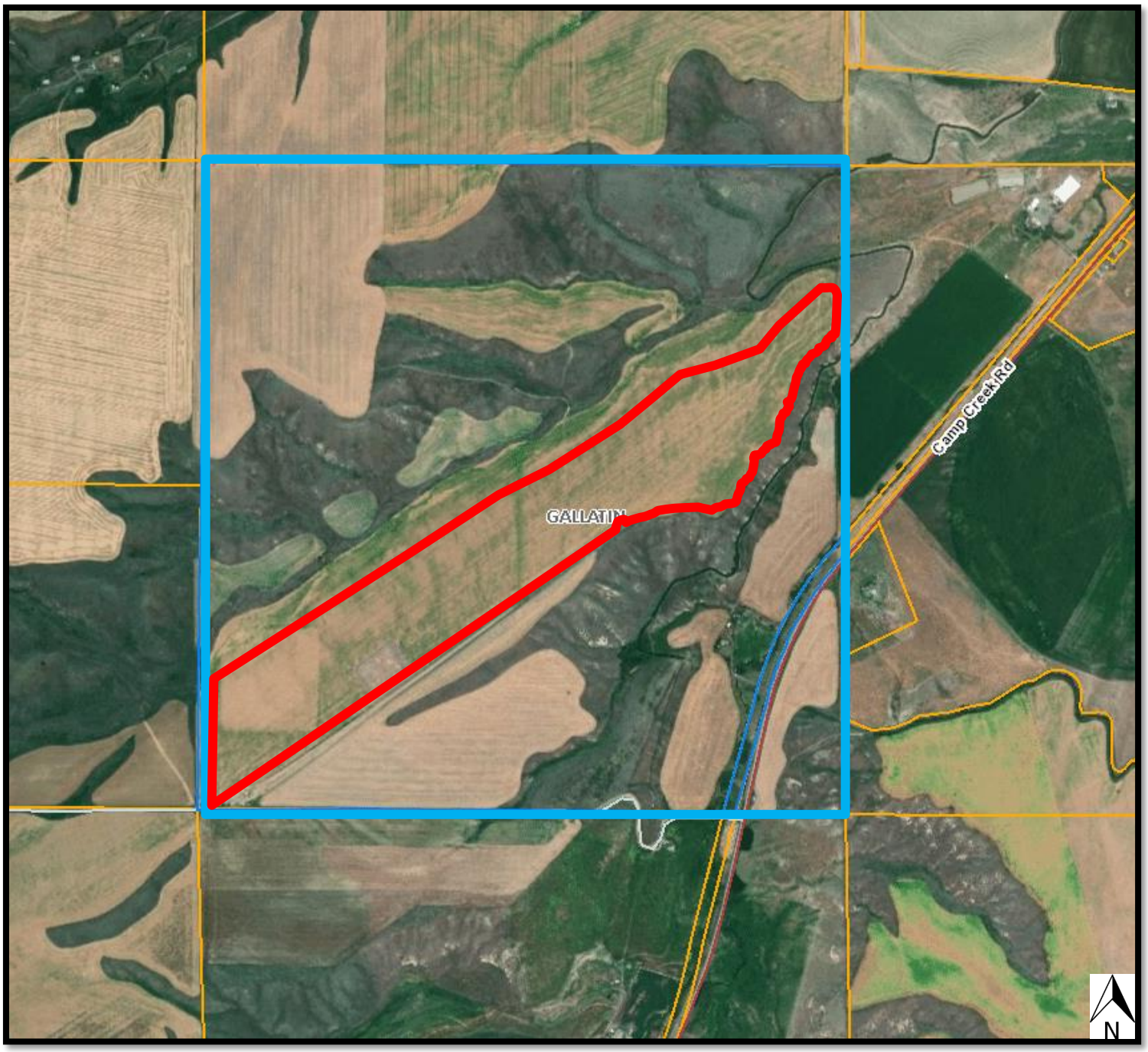
(Site 1 in red; Vander Molen property in blue; surrounding property boundaries in orange)



*Source: Montana Cadastral (**NOT TO SCALE**)*

Figure 2: Site 2

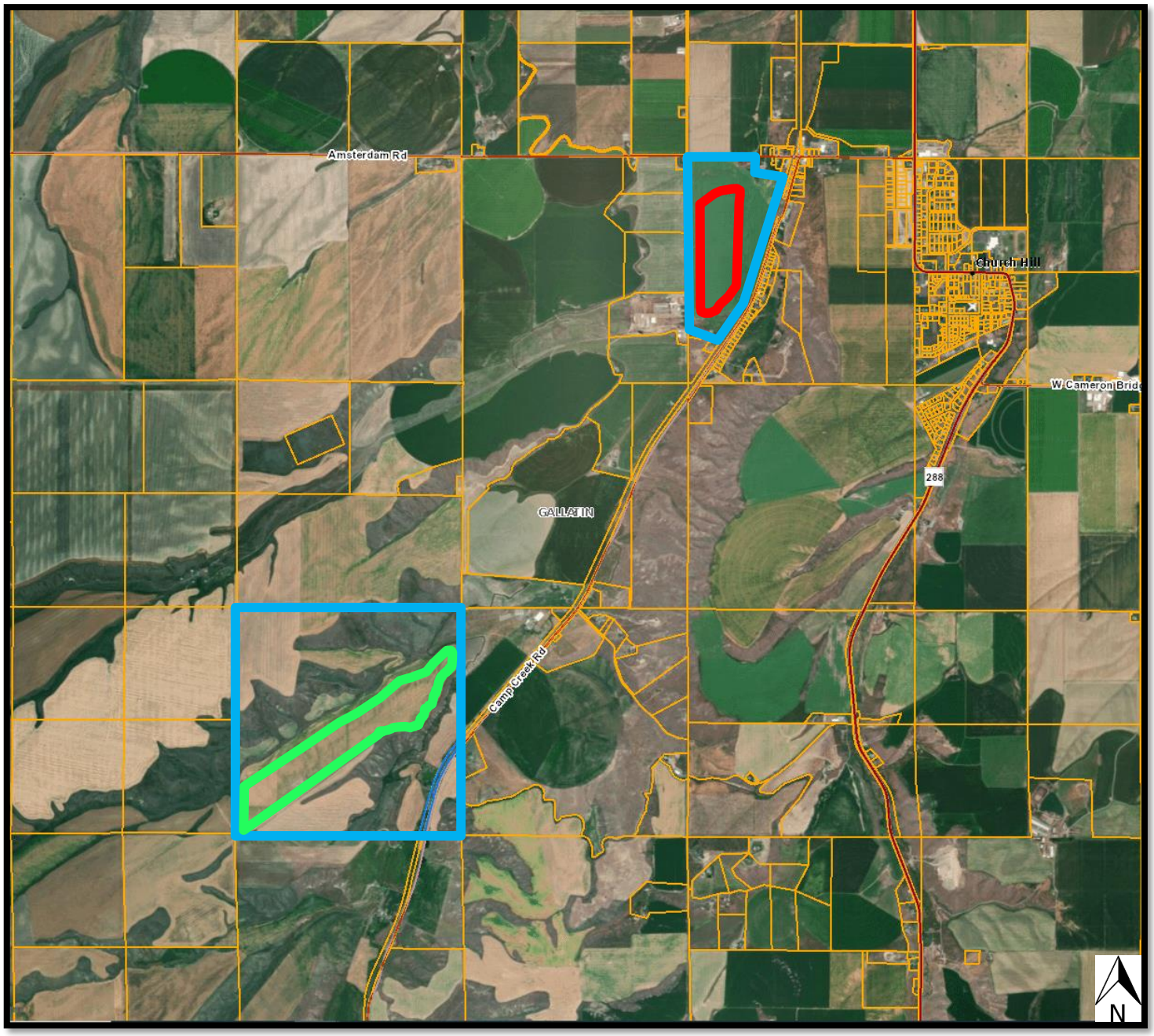
(***Site 2 in red; Vander Molen property in blue; surrounding property boundaries in orange***)



*Source: Montana Cadastral (**NOT TO SCALE**)*

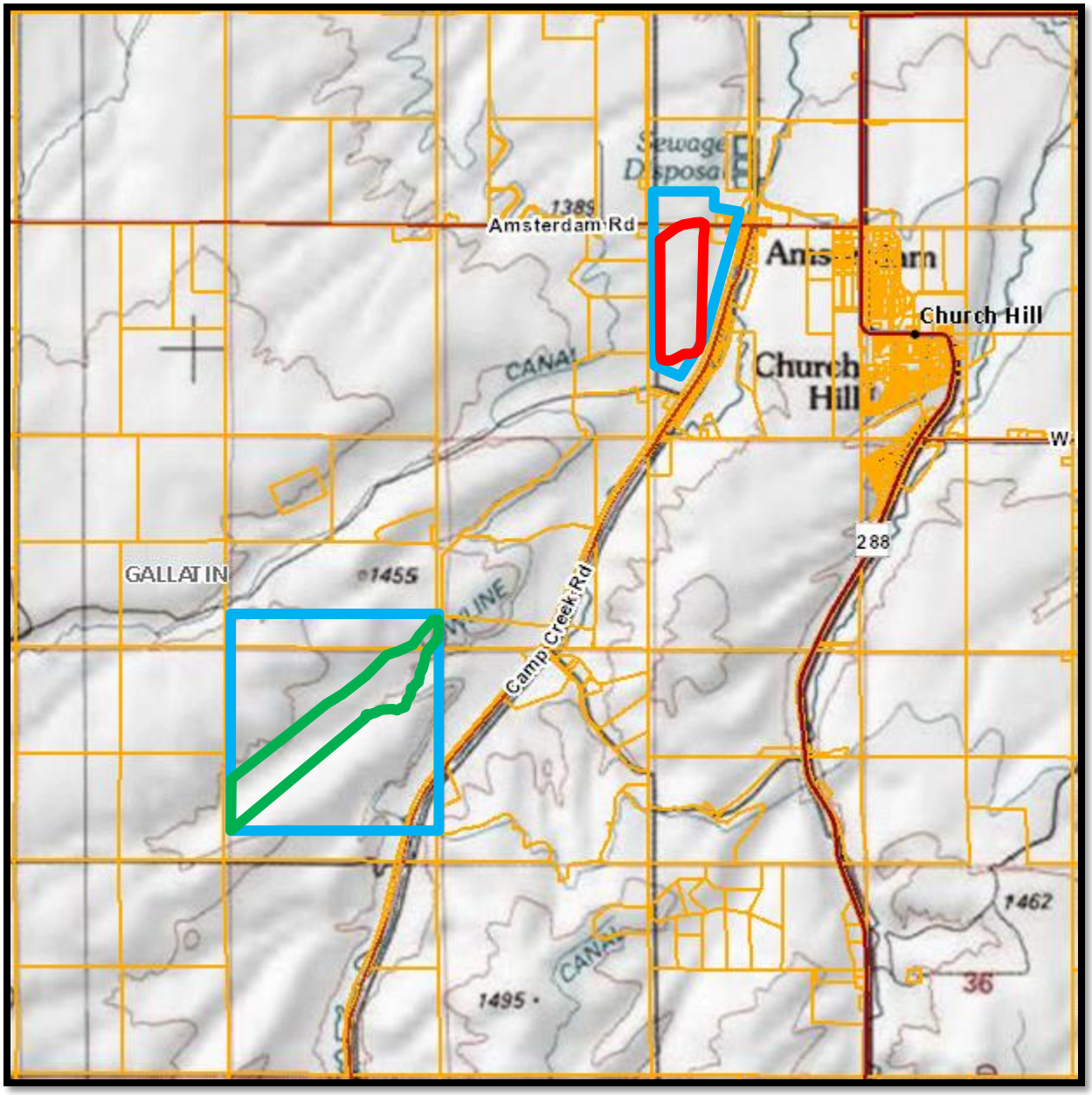
Figure 3: Study Areas

(Site 1 in red; Site 2 in green; Vander Molen property in blue)



*Source: Montana Cadastral (**NOT TO SCALE**)*

Figure 4: Topographic Map
(Site 1 in red; Site 2 in green, Vander Molen property in blue)



*Source: Montana Cadastral (**NOT TO SCALE**)*

1.5 COMPLIANCE WITH MEPA

Under MEPA, Montana agencies are required to prepare an environmental review for state actions that may have an impact on Montana's human health and environment. The Proposed Action is a state action that may have an impact on the human environment. Therefore, DEQ must prepare an environmental assessment. This Draft EA analyzes the Proposed Action and alternatives to the Proposed Action and discloses potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in ARM 17.4.608.

1.6 PUBLIC INVOLVEMENT

DEQ released this Draft EA to present its initial findings described in *Section 4*. A 30-day public comment period begins upon release of the document. The public comment period ends on December 24, 2020.A notice of availability for the Draft EA was sent to adjacent landowners and other interested parties. A public notice was published in Bozeman Daily Chronicle and a hard copy was sent to Bozeman Public Library in Bozeman, Montana. The public notice and Draft EA may be viewed at: https://deq.mt.gov/public/ea/SepticPumpers.

2. DESCRIPTION OF ALTERNATIVES

This Section describes the Proposed Action and No Action alternatives. MEPA requires the evaluation of reasonable alternatives to the Proposed Action. Reasonable alternatives are achievable under current technology and are economically feasible, as determined by the economic viability of similar projects with similar conditions and physical locations. Reasonable alternatives are determined without regard to the economic strength of the applicant and may not include an alternative facility or an alternative to the proposed project itself.

According to ARM 17.4.609(3)(f), an environmental assessment (EA) must include reasonable alternatives whenever reasonable and prudent. DEQ has not included any other alternatives to mitigate potential impacts because TLC's application and Operation and Maintenance (O&M) plan contain sufficient mitigating factors.

2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Sites would not be approved by DEQ. Therefore, the Sites could not be used by TLC and disposal of septage would have to occur at another approved location or treatment works.

2.2 PROPOSED ACTION

TLC is proposing the land application of septage, graywater, portable toilet waste, and grease trap waste on the Sites, described in *Section 1.1.*

2.2.1 LAND APPLICATION SITE OPERATIONS

The operational and setback requirements for land application of septage at these Sites are provided in **Tables 1** and **2**:

Table 1: Land Application Operational Requirements

ARM Reference	Specific Restrictions
17.50.809(10)	All non-putrescible litter must be removed from the land application site within 6 hours of application.
17.50.809(12)	Pumpings may not be applied at a rate greater than the annual application rate (AAR) of the site for crop nitrogen requirement on an annual basis.
17.50.810(1)	Pumpings may not be applied to flooded, frozen, or snow-covered ground if the pumpings may enter state waters.

17.50.811(3)	Pumpings may be applied only if the person first performs one of the following vector attraction and pathogen reduction methods: • injection below the land surface so no significant amount remains on the land surface within one-hour of injection; • incorporation into the soil surface's plow layer within 6 hours of application; • addition of alkali material so that the pH is raised to and remains at 12 or higher for a period of at least 30 minutes; or, • management as required by 17.50.810 when the ground is frozen

Table 2: Land Application Site Setback Requirements

ARM Reference	Specific Restrictions
17.50.809(1)	Pumpings may not be applied to land within 500 feet of any occupied or inhabitable building.
17.50.809(2)	Pumpings may not be applied to land within 150 feet of any state surface water, including ephemeral or intermittent drainages and wetlands.
17.50.809(3)	Pumpings may not be applied to land within 100 feet of any state, federal, county, or city-maintained highway or road.
17.50.809(4)	Pumpings may not be applied to land within 100 feet of a drinking water supply source.
17.50.809(6)	Pumpings may not be applied to land with slopes greater than 6%.
17.50.809(8)	Pumpings may not be applied to land where seasonally high groundwater is 6 feet or less below ground surface.

Land application would be limited to areas approved by DEQ. Areas within the Sites would not be used until their boundaries have been marked and approved by DEQ or the local county sanitarian.

TLC would be required to log the type and amount of septage land applied annually as well as the dates applied. Disposal logs would be submitted to DEQ semiannually. DEQ would verify each Site's annual application rate (AAR) and may periodically monitor the soils for adherence to the proposed maximum AAR.

2.2.2 EQUIPMENT AVAILABLE AND PUMPER TRUCK REQUIREMENTS

TLC has the following equipment available for land application activities:

1. 2021 International 4700-gallon septic truck with screener and spreader
2. 2013 Mack 4000-gallon septic truck with screener and spreader plate
3. John Deere tractor with harrow

The Septic Tank, Cesspool, and Privy Cleaner Vehicle Inspection Form was created by DEQ to guide the vehicle inspection. The county health officer's (or designated representative's) signature on the vehicle inspection form certifies that the vehicle is equipped to adequately screen and spread septage while land

applying. The following questions are on the form to verify compliance with the Septic Rules:

1. Does the vehicle show signs of leakage?
2. Is the vehicle equipped with the proper spreading equipment?
3. Is the spreading equipment mounted on the vehicle or separate?
4. If required to screen septage before land applying, is the vehicle, or site, equipped with the proper screening equipment?
5. Is the spreading equipment approved for use?
6. Is the screening equipment approved for use?
7. Make/Model of Vehicle
8. Tank Size

TLC would be required to submit this form to DEQ for each pump or vac truck prior to its proposed use for septage land application.

2.2.3 AMOUNT AND EXTENT OF SEPTAGE APPLICATION

Land application must not exceed the AAR (gallons per acre per year) based on:

1. The nitrogen content of the waste applied at the Site; and
2. The crop nitrogen yield for the crop or other vegetation at the Site.

The AAR for portable toilet and vault type waste is calculated as follows:

$$\textbf{AAR} = \frac{\text{minimum crop nitrogen requirement (lbs./acre/year)}}{0.0052 \text{ (lbs./gallon)}}$$

Because portable toilet and vault type waste and septage would be land applied, the AAR is adjusted for the portable toilet and vault type waste to accommodate for its higher nitrogen concentrations.

The canola grown at the Sites has a crop nitrogen requirement of 130 pounds per acre per year. The resulting AAR for septage is 25,000 gallons per acre per year, which is equal to approximately 0.92 inches of liquid applied annually per acre. For comparison, the average annual precipitation in the Bozeman area is 12.5 inches per year.

Land application of septage at the AAR is alternated annually between separate parcels (sections of each Site's land application area) to allow for agronomic crop uptake of the applied nitrogen. Plants can utilize the total nitrogen available from the septage if the volume of septage applied in one year does not exceed the AAR. Land application areas will be rotated within the Sites, so one parcel is used every year. For example, if 100 acres are proposed for land application, 50 acres would be used one year and the other 50 acres would be used similarly the next year. TLC would rotate these parcels accordingly to prevent overapplication and exceedance of the AAR. The residual soil nutrient levels at each parcel would vary over time. DEQ may periodically monitor the

soil for nutrient concentrations to determine compliance with the AAR and modify, if necessary.

The Sites could annually treat the proposed 850,000 gallons of waste without exceeding the AAR.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES BY RESOURCE

3.1 LOCATION DESCRIPTION AND STUDY AREA

The Sites are referenced in *Section 1.1* of this Draft EA. The study area includes land and resources within and surrounding the Sites. DEQ staff visited each Site to observe resources, habitats, land uses, and species present.

3.2 IMPACTS

Table 3 shows a summary of the impacts of the No Action Alternative and the Proposed Action.

Table 3: Impacts

Resource	Alternative 1 – No Action	Alternative 2 – Proposed Action
Wildlife and Habitats	Minor impact.	Minor impact. Wildlife tend to avoid land application sites due to human scent and activities and would relocate (See *Section 3.2.1*).
Soils and Vegetation	Minor impact.	Minor impact. The quality of soils and vegetations would be enhanced by the Proposed Action (See *Section 3.2.2*).
Geology	No impact.	No impact (See *Section 3.2.3*).
Hydrology and Hydrogeology	No impact.	No impact (See *Section 3.2.4*).
Aesthetics and Noise	Minor impact.	Minor impact. Land application activities resemble agricultural activities occurring in the surrounding area (See *Section 3.2.5*). Odor would largely be controlled by daily tilling.
Human Health & Safety	No impact.	No impact (See *Section 3.2.6*).

Industrial, Commercial, and Industrial Activities	No impact.	No impact (See *Section 3.2.7*).
Cultural Uniqueness and Diversity	No impact.	No impact (See *Section 3.2.8*).
Demand for Government Services	Minor impact.	Minor impact. Gallatin County sanitarian and DEQ would conduct periodic inspections of the Sites (See *Section 3.2.9*).
Socioeconomics	No impact.	No impact (See *Section 3.2.10*).
Traffic	Minor impact.	Minor impact. TLC would access the Sites via Amsterdam Road and/or Camp Creek Road, which currently support traffic to homes and businesses in the area (See *Section 3.2.11*).

3.2.1 WILDLIFE AND HABITATS

Impacts to wildlife and habitats from the Proposed Action would be minor.

Transient wildlife tend to avoid land application sites due to human scent and activities. Montana Fish, Wildlife & Parks (FWP) manages the overall wildlife populations in the region. Species of fish and amphibians are not included on the following lists because land application activities would not impact nearby perennial waters (see *Section 3.2.3.1*). There are no wetlands present at the Sites.

The applicant does not plan to expand the Sites beyond what is described in the application. Therefore, no habitats outside the land application areas would be impacted. Adjacent cultivated fields limit the habitat suitability immediately surrounding the Sites. Habitat availability in the region is further restricted by agricultural activity and commercial and residential development to the east. An adequate amount of similar habitat exists to the west and south of the Sites where any species forced to relocate due to the Proposed Action can be accommodated.

3.2.1.1 THREATENED AND ENDANGERED SPECIES

U.S. Fish & Wildlife Service's (USFWS) online databases were used to identify plant and animal species at the Sites and larger study area (USFWS, 2020). The USFWS species and status listings for Gallatin County, Montana, are shown in **Table 4**:

Table 4: Federally Established Threatened and Endangered Species List

Scientific Name	Common Name	Status
Haliaeetus leucocephalus	Bald eagle	Recovery
Pinus albicaulis	Whitebark pine	Candidate
Spiranthes diluvialis	Ute ladies'-tresses	Threatened
Canis lupus	Gray wolf	Recovery
Ursus arctos horribilis	Grizzly bear	Threatened
Lynx canadensis	Canada lynx	Threatened
Gulo gulo luscus	North American wolverine	Threatened (proposed)

The Sites do not currently provide the habitat necessary for the listed species and the Proposed Action is not anticipated to impact them.

3.2.1.2 SPECIES OF CONCERN

No impacts to species of concern are anticipated because of the Proposed Action.

Designation as a species of concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers to make proactive decisions regarding species conservation.

The Montana Natural Heritage Program's (MNHP) online databases were accessed for listed species (MNHP, 2020). The MNHP species and status listings for Township 1 South, Range 3 East are shown in **Table 5**.

Table 5: Federally Established Species of Concern List

Scientific Name	Common Name	Status	GRank/SRank
Lasiurus cinereus	Hoary bat	Species of concern	G3/S3
Myotis lucifugus	Little brown myotis	Species of concern	G3/S3
Anthus spragueii	Sprague's pipit	Species of concern	G3/S3

The MNHP uses a standardized ranking system developed by The Nature Conservancy and maintained by NatureServe. Each species is assigned two ranks; one represents its global status (GRank), and one represents its status in the state (SRank). The scale is 1-5; 5 means common, widespread, and abundant; 1 means at high risk. For this assessment, species with a GRank 5 are not included.

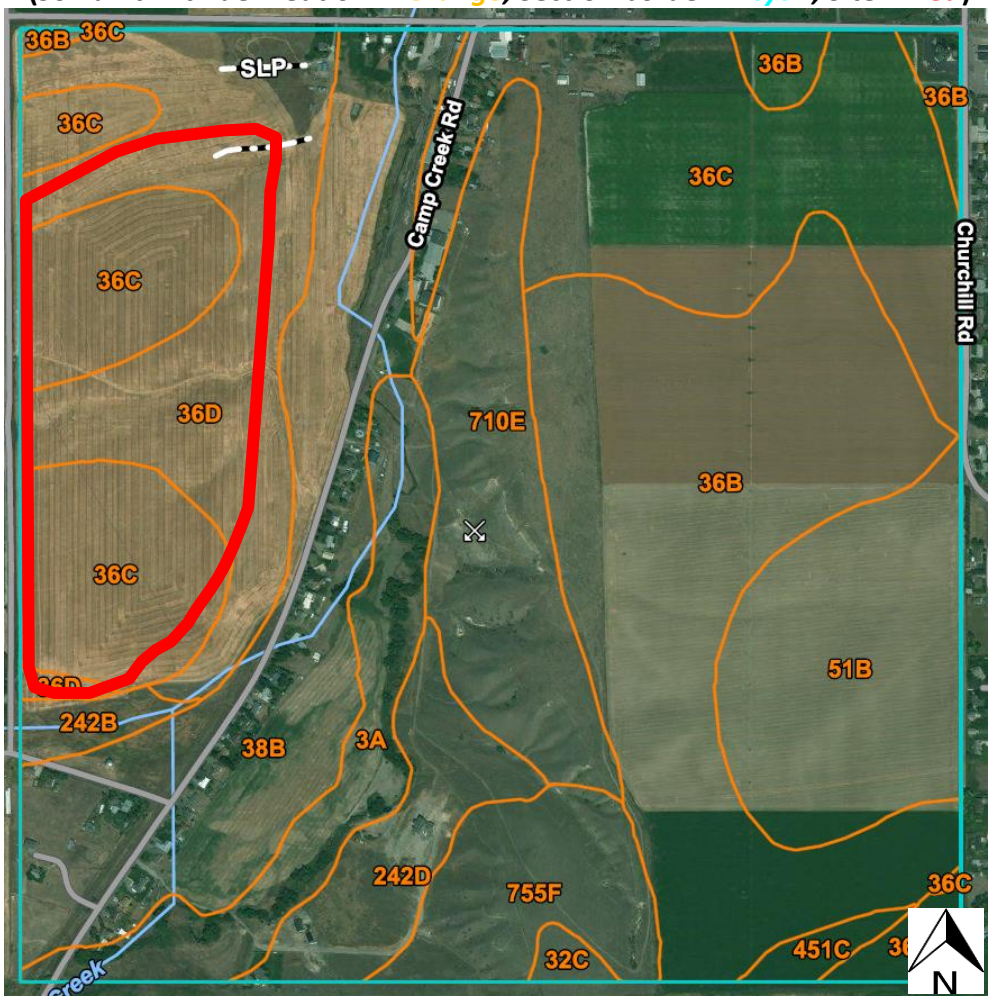
The Sites are not located within a Core Area or any other recognized habitat level for sage grouse, as designated by the Department of Natural Resources and Conservation (DNRC).

3.2.2 SOILS AND VEGETATION

The impact of the Proposed Action to soils and vegetation would be minor.

The US Department of Agriculture (USDA) - Natural Resources Conservation Service's (NRCS) National Cooperative Soil Survey databases were accessed for information about the shallow subsurface soils at the Sites and surrounding areas (**Figures 5 and 6,** and **Tables 6 and 7**).

Figure 5: Site 1 Soil Resource Map
(*Soil unit with delineation in orange, Section border in cyan, Site in red*)

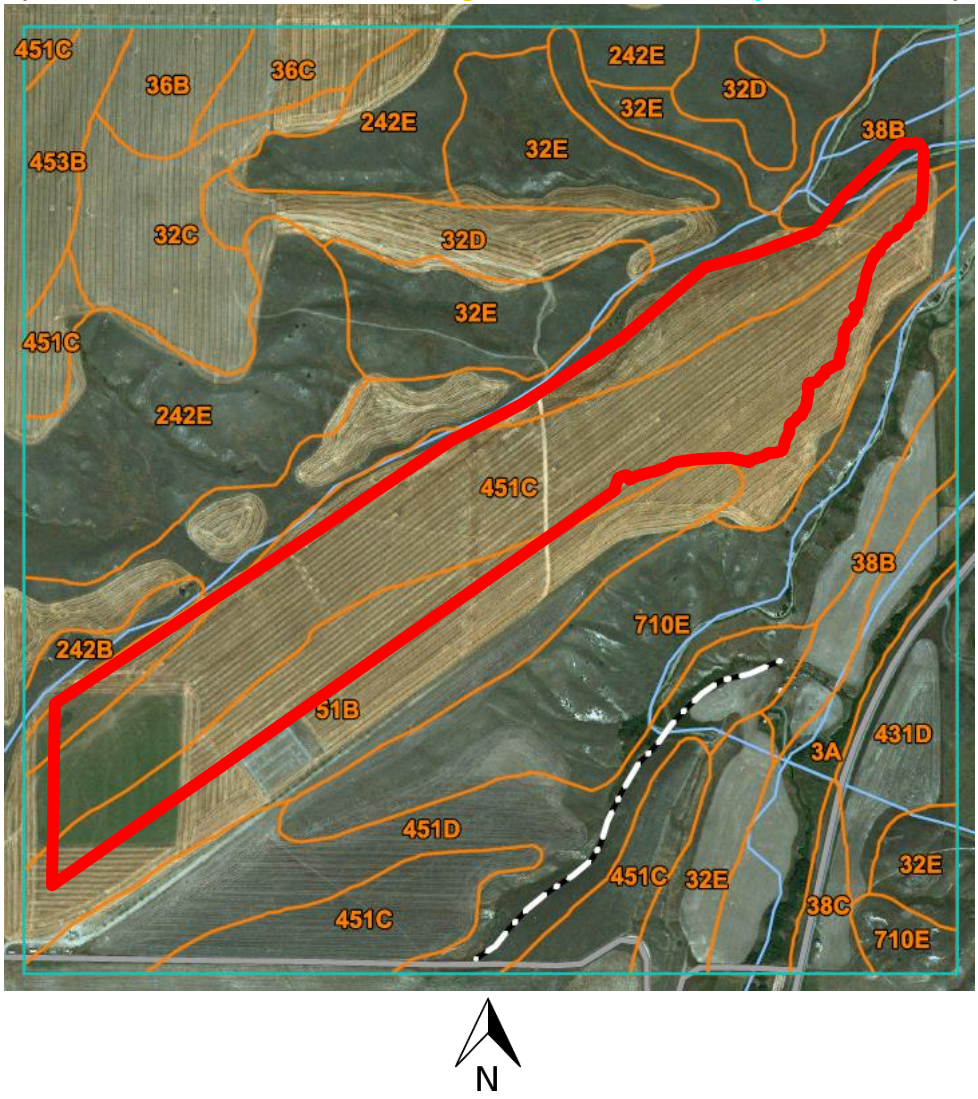


*Source: USDA-NRCS, 2020 (**NOT TO SCALE**)*

Table 6: USDA-NRCS, Site 1 Custom Soil Resource Report, 2020

Map Unit Symbol	*Map Unit Name*	*Soil Rating*
36C	*Brocko silt loam, 4 to 8 percent slopes*	*Not limited*
36D	*Brocko silt loam, 8 to 15 percent slopes*	*Somewhat limited*

Figure 6: Site 2 Soil Resource Map
(*Soil unit with delineation in orange, Section border in cyan, Site in red*)



*Source: USDA- NRCS, 2020 (**NOT TO SCALE**)*

Table 7: USDA-NRCS, Site 2 Custom Soil Resource Report, 2020

Map Unit Symbol	*Map Unit Name*	*Soil Rating*
51B	*Quagle silt loam, 0 to 4 percent slopes*	*Not limited*
32D	*Amesha loam, 8 to 15 percent slopes*	*Somewhat limited*
451C	*Quagle-Brodyk silt loams, 4 to 8 percent slopes*	*Not limited*

The predominant soil types where land application would occur are Brocko silt loams (36B, C, and D), Amesha loams (32 C and D), and Quagle silt loams (51 B and 451 C). Ratings shown in **Tables 6 and 7** are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which septage is applied, and the method by which the septage is applied. "Not limited" indicates that the soil has features that are favorable for the specified use. Good performance and low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use (NRCS, 2020).

The fields are currently dedicated to production of canola. Adjacent agricultural fields have been used recently to raise grains and other row crops. The MNHP online databases were also accessed for plant species of concern, listed in **Table 8** (MNHP, 2020). The Sites are not known to harbor the listed plant species of concern. Detection of any plant species of concern at or near the Sites must be reported to DEQ for further evaluation.

Table 8: Montana Recognized Species List

Scientific Name	Common Name	Status	GRank/SRank
Gymnosteris parvula	Small-flower gymnosteris	Species of concern	G4/S2

Septage contains nutrients that can reduce the reliance of farmers on chemical fertilizers to improve soil. The Proposed Action would add valuable moisture, organic matter, and nutrients to the topsoil, improving the soil tilth and crop production on the Sites. The quality of soil nutrients and quantity of vegetation at the Sites would be enhanced by the Proposed Action.

DEQ analyzed how the land application of septage would impact the environment of the Sites given the weather of the region. The weather in the area is typical of southwest Montana, classified as warm summer continental climate. The monthly average pan evaporation is listed as 29.72 inches per year. The hot months of June, July, and August coincide with the average Montana septic tank pumper's busy season. Dry soils, vegetation, and crops would benefit from the added moisture.

3.2.3 GEOLOGY

No geological impacts are anticipated to result from the Proposed Action.

Periodic tilling or harrowing of the surface topsoil to incorporate septage would not significantly affect the thickness or character of shallow sediments found on the Sites. Pumper land application operations would not involve excavation.

The resource study area for geology includes the Sites and the surrounding area (beyond a mile) as provided by the full extent of the geologic map area in **Figure 7**. The analysis methods include reviewing geology field guidebooks of the area, current

United States Geological Survey (USGS) and Montana Bureau of Mines and Geology (MBMG) publications, and associated online maps accessed via the MBMG ArcGIS portal. Much of the geologic assessment that follows is derived from professional experience of the authors in the region, general interpretation of relationships shown on the latest geologic maps of the Bozeman quadrangle and Montana (Vuke, *et al.* 2002 and 2007), and a Master's Thesis on the Lower Belt Supergroup of the area (Anderson, 2017).

The older "Three Forks" intermontane basin (shown as flesh tones beneath and surrounding the Sites on **Figure 7**) predates the Gallatin Valley and was formed by prior stretching of continental crust in the embayment during the late stages of initial Cordillera mountain building. These deformed, highly variable and partly cemented Tertiary basin rocks were then much later covered by Late Tertiary and Quaternary alluvium. The youngest sediments now mostly covering the existing Gallatin Valley are composed of various largely unconsolidated, Pliocene to Quaternary gravels (shown by yellow to white tones on **Figure 7**). This relatively recent valley was formed last by reactivated motion within the embayment as crust again dropped to the north on the Willow Creek fault zone to sculpt the landscape seen today in the embayment.

The two Sites (small red, and green borders on **Figure 7**) are located just southwest of Belgrade between the Gallatin and Madison Rivers in the broad Gallatin Valley. The geology study area today lies within the active seismic zone known as the Intermountain Seismic Belt of the northern Rocky Mountains caused by ongoing tensional stresses across the region. Extension continues today, with many earthquakes partly following the normal faults on the margins of the basin-and-range style block valleys separating the mountain ranges. Active hot springs are also found along the Willow Creek fault zone today (*e.g.* at Whitehall, Norris, and Bozeman). The three forks of the modern Missouri River join today nearby the Sites at the confluence of the Jefferson, Madison, and Gallatin rivers in the Gallatin Valley northwest of the geologic map's margin.

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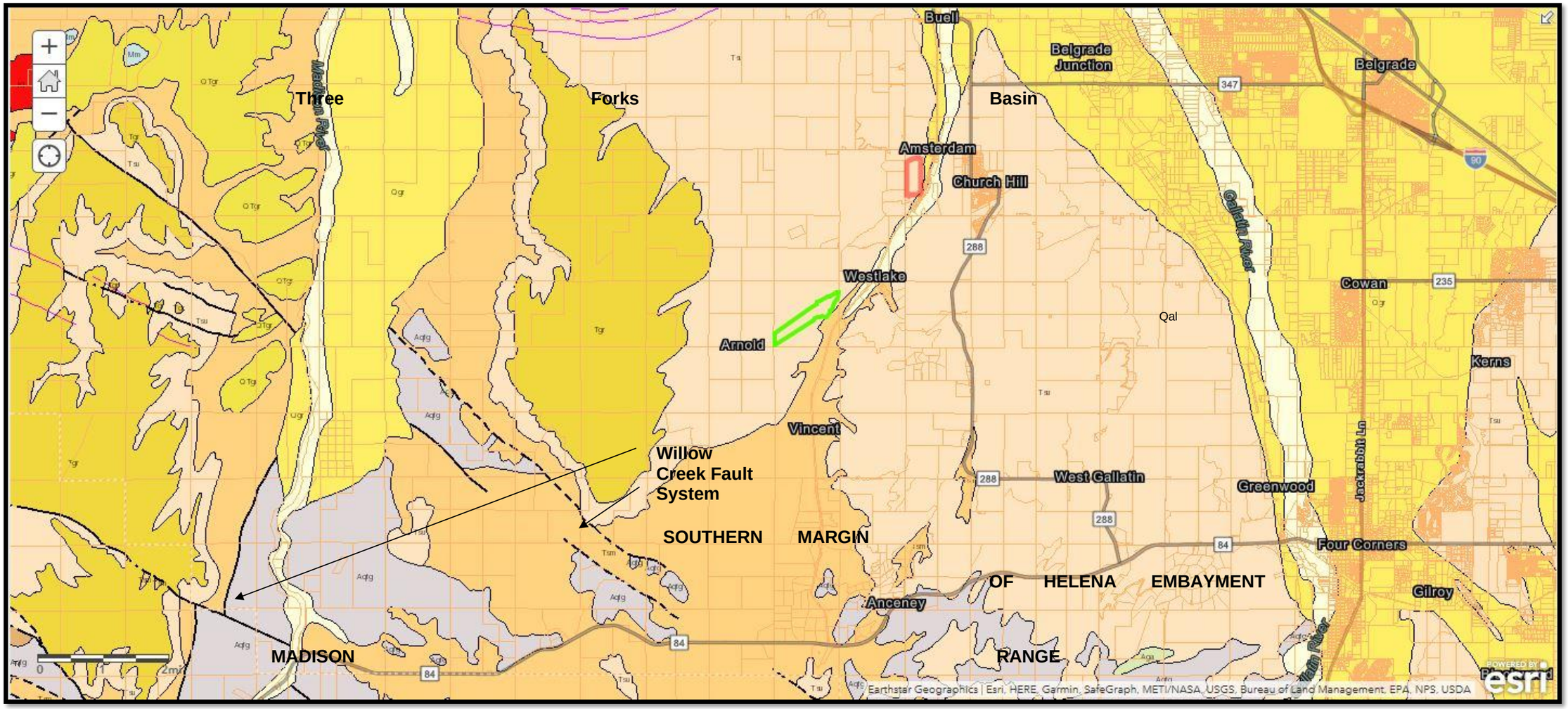
Figure 7: Regional Geologic Map
(*Site 1 red, and Site 2 green borders*)



** Archean craton is solid purple; Qal shown white. Bold black lines or dashes are faults; Solid red areas or thin purple lines are intrusives. North of the map area, the Gallation and Madison river channelsl curves westward to join the Madison and Jefferson rivers at the headwaters of the Misouri River near the town of Three Forks. Light brown lines show property boundaries.*
Source: MBMG, web mapping application and Montana Geologic Map 62 (2007), Montana Cadastral Map, NRIS

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NOT TO SCALE

3.2.4 HYDROLOGY AND HYDROGEOLOGY

The analysis area for hydrology and hydrogeology are the Sites and the surrounding area (beyond a mile). Some discussion of regional geology, based upon published reports, is also provided. The analysis methods include reviewing wetland and jurisdictional waters information, onsite drilling reports, publications of the Montana Bureau of Mines and Geology (MBMG), and online maps (Esri/MT GIS Webportal, 2020).

3.2.4.1 SURFACE WATER

No impacts to surface waters are expected due to the Proposed Action.

The Gallatin River is the principal drainage of the area. Sites 1 and 3 are in the Madison Plateau-Camp Creek watershed, hydrologic unit code (HUC) 100200080602. Site 2 is in the Camp Creek-Gallatin River watershed, HUC 100200080705 (**Figure 7**). Camp Creek is the nearest surface water to Site 1, situated approximately 750 feet to the east at its closest point. The nearest surface water to Site 2 is Godfrey Creek, which is located approximately 0.4 miles to the east at its closest point. For Site 3, the nearest surface water is Lowline Canal, which is approximately 170 feet from the land application area at its closest point. Camp Creek is situated approximately 0.2 miles to the east of Site 3. All ephemeral drainages, canals, and perennial streams near the Sites eventually flow to the Gallatin River, which confluences with the Jefferson and Madison Rivers to form the Missouri River at its headwaters near Three Forks, MT.

Setbacks would be maintained and verified to ensure no septage enters any drainages and would not impact state waters.

3.2.4.2 GROUNDWATER

No impacts to groundwater are expected due to the Proposed Action.

The Montana Bureau of Mines and Geology's Ground Water Information Center (GWIC) is DEQ's reference for well data in Montana. All wells located within one mile of the Site and documented by GWIC when this Draft EA was written were considered. Any well not documented in GWIC is not included in this Draft EA, but if wells are proven to be within setbacks, the Sites' boundaries would be adjusted to maintain the setbacks.

The Montana DEQ Source Water Protection Program, City of Belgrade Public Water System, Source Water Assessment Report (January 30, 2006, p.4) provides a general description of the depositional environment and hydrogeologic characteristics of the Gallatin Valley as follows:

"The Gallatin Valley extends over roughly 520 square miles of southwestern Montana…The valley is drained by the Gallatin River and its tributaries. Quaternary flood-plain alluvium generally is the most permeable material in

the basin, and the most reliable source of ground water…Quaternary deposits cover more than half of the basin. These deposits consist of a heterogeneous mixture of coarse and fine-grained sediments. Quaternary flood-plain alluvium underlies the Gallatin River and extends across the large plain between the Gallatin and East Gallatin rivers. Moderately sorted cobbles, pebbles, and gravel compose a majority of the alluvium, but sand, silt, and clay are also present in places…Quaternary and Tertiary alluvial-fan deposits have a wide range of hydraulic characteristics, indicating that they can provide sufficient supplies for many water uses including domestic, livestock, and irrigation… Basin-fill aquifers are unconfined throughout the Gallatin Valley. Bedrock is not an important aquifer in the basin. "

The extent of these gravelly Quaternary to Tertiary alluvial deposits are shown on **Figure 7,** *Section 3.2.3*. The alluvium is underlain by older Tertiary basin sediments, which are often exposed when the alluvium is eroded and are likely present on the surface at the sites. The character, grain size, and degree of cementation of the Tertiary basin sedimentary strata can vary considerably.

Site 1

In general, the groundwater flow direction in the Site 1 vicinity is northwest towards the Gallatin River. According to GWIC's database, there are 68 groundwater production wells located within a 1-mile radius of Site 1 (**Figure 8**). The GWIC #129904 (formerly located on Site 1) well log indicates alluvial sands and gravels were encountered to a depth of 67 feet below ground surface (bgs), and static water level is 45 feet bgs, greater than the six-foot minimum required by ARM 17.50.809(8). SWS personnel met with the landowner and he indicated that GWIC #129904 no longer exists on Site 1.

Inspections and possible monitoring of soil and/or groundwater by DEQ would validate compliance with requirements for land application of septage at Site 1. No impacts to nearby groundwater production wells are anticipated due to land application activities at Site 1.

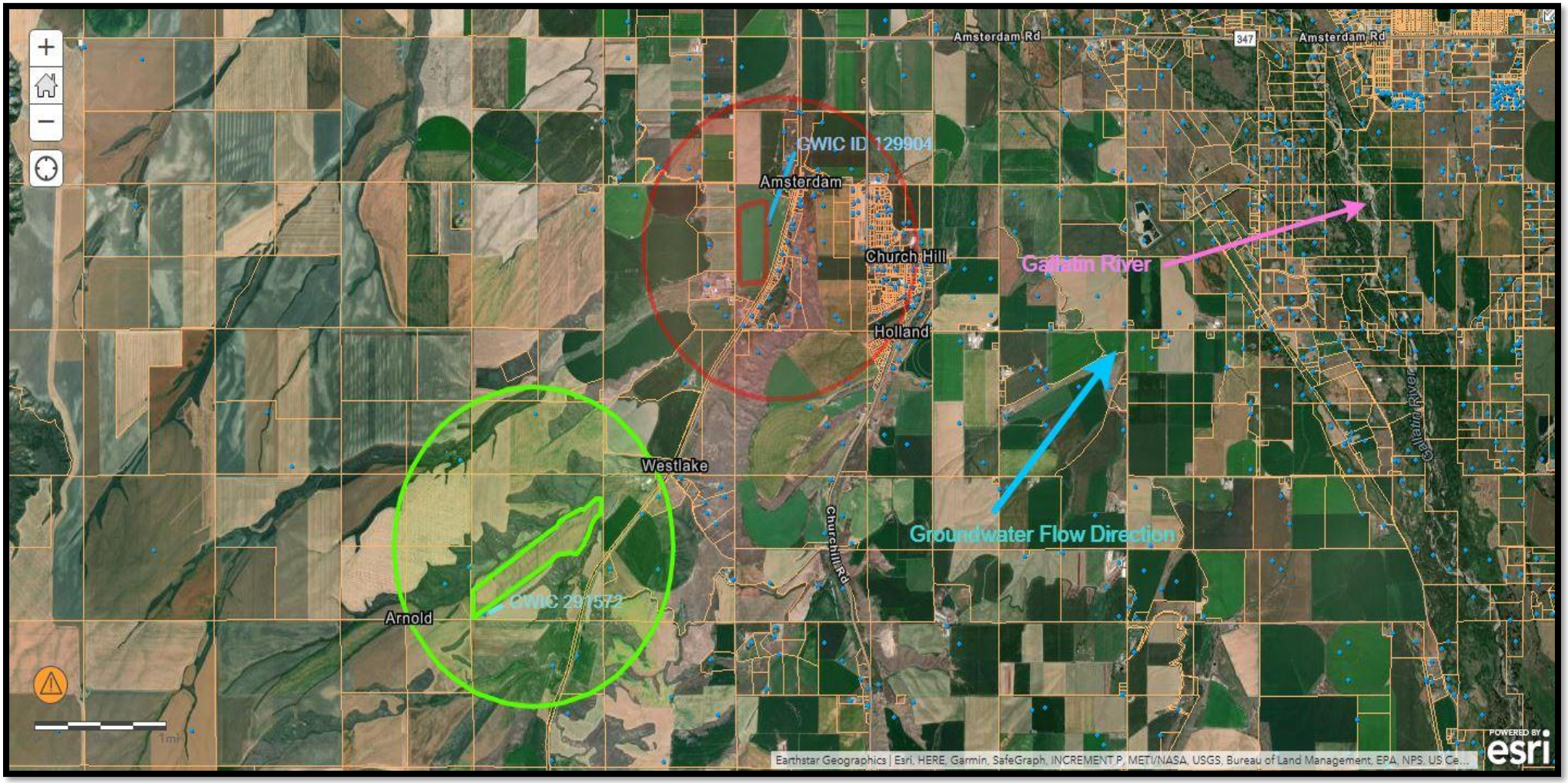
Site 2

In general, the groundwater flow direction in the Site 2 vicinity is northwest towards the Gallatin River. According to GWIC's database, there are 11 groundwater production wells located within a 1-mile radius of Site 2 (**Figure 8**). GWIC #291572 is located approximately 130 feet cross gradient of the land application area. The well log indicates an approximately 30-foot-thick silty clay confining layer exists above the sandy gravel zone at 36 feet bgs. The static water level in GWIC #291572 is 177 feet bgs, greater than the six-foot minimum required by ARM 17.50.809(8). Fences would be erected to establish a 100-foot perimeter around GWIC #291572 to ensure no septage enters the required setback area.

Inspections and possible monitoring of soil and/or groundwater by DEQ would validate compliance with requirements for land application of septage at Site 2. No impacts to nearby groundwater production wells are anticipated due to land application activities at Site 2.

Figure 8: Location of Nearby Groundwater Production Wells

GWIC wells in blue circles, approximate Site boundaries outlined in red Site 1, green Site 2)



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*Source: Esri/MT GIS Webportal and GWIC/MBMG (**NOT TO SCALE**)*

3.2.5 AESTHETICS AND NOISE

The impact to aesthetics and noise from the Proposed Action would be minor.

Amsterdam Road, Churchill Road, Camp Creek Road, or Arnold Road would be used to access each Site. Each Site is on private property, accessed via a private road. The Sites are not located on prominent topographical features. No other development is anticipated at the Sites. Land application activities would resemble agricultural activities occurring in the surrounding areas.

DEQ and/or the local county sanitarian would respond to complaints about odor to determine if wastes were not properly managed. With proper management, odors would be minimal. The naturally occurring bacteria in the soil uses carbon in the waste as a fuel source. This activity results in the breakdown of wastes, which include odors. Usually, odors are only detected at the time of the land application activity and are controlled by tilling. Dust caused by tilling activities during the dry season would be reduced by the moisture content of the septage.

The Proposed Action would be visible from main roads, resembling the sights and sounds of agricultural activities occurring in the surrounding area. Therefore, impacts to aesthetics and noise would be minor.

3.2.6 HUMAN HEALTH & SAFETY

No impacts on human health and safety are expected due to the Proposed Action.

Septage would be land applied at the Sites and incorporated into the soil surface within six hours of application. No livestock grazing areas exist on the Sites. The Sites currently grow canola. ARM 17.50.811 (4)(d) prohibits harvest for 30 days after the most recent application of septage.

Access into the Sites, via private roads, is controlled by a fence and gate.

Therefore, no impacts to human health and safety are expected due to the Proposed Action.

3.2.7 INDUSTRIAL, COMMERCIAL, AND AGRICULTURAL ACTIVITIES

No impacts to industrial and commercial activities are expected due to the Proposed Action. Minor positive impacts to agricultural activities are expected due to the Proposed Action.

The Sites are zoned as agricultural land and would not accommodate industrial or commercial activities. When land application occurs on an annual rotation (*Section 2.2.3*), crop production can occur and agricultural activities on the Sites can continue. During such rotation, the farmland lies fallow for a year before planting, thus the harvest cycle would be every two years within the site areas where land application would be allowed. Such fallow rotations of fields are common for many crops and

weed control. Land application of septage would improve soil health and promote vegetation growth while alleviating the need for chemical fertilizers.

Therefore, no impacts to industrial and commercial activities are expected due to the Proposed Action. Minor positive impacts to agricultural activities are expected due to the Proposed Action.

3.2.8 CULTURAL UNIQUENESS AND DIVERSITY

No impacts to cultural uniqueness and diversity are expected due to the Proposed Action.

The State Historic Preservation Office (SHPO) conducted a resource file search for Section 14, 23, 36, and 28, Township 1 South, Range 3 East, which indicated there have been no previously recorded sites within the area. Based upon ground disturbances in association with agricultural activities and residential development in the area, SHPO determined there is a low likelihood that cultural properties would be impacted. Any discovery of artifacts, however, must be reported.

3.2.9 DEMAND FOR GOVERNMENT SERVICES

The impact to demand for government services from the Proposed Action would be minor.

The Gallatin County sanitarian and DEQ would oversee operations at the Sites. The Gallatin County sanitarian and DEQ staff would conduct periodic inspections of land application activities at the Sites. Disposal logs showing volumes of waste applied at the Sites are submitted to DEQ twice a year. Disposal logs would be reviewed by DEQ to ensure the AAR is not exceeded. Site inspections are performed at all septic tank pumper land application sites. DEQ would also periodically monitor the soils at the Sites for compliance with the AAR as reported.

Therefore, the impact to the demand for government services from the Proposed Action would be minor.

3.2.10 SOCIOECONOMICS

No impacts to socioeconomics are expected due to the Proposed Action.

No additional employees would be hired because of the Proposed Action. Employees currently employed by TLC would conduct necessary operations at the Sites.

Therefore, no impacts to socioeconomics are expected.

3.2.11 TRAFFIC

The impact to traffic from the Proposed Action would be minor.

There would be no significant increase in traffic on Dyk Road, Amsterdam Road, or Camp Creek Road. TLC would periodically utilize these roads to access the Sites. These roads currently support traffic to homes and businesses in the area.

Therefore, the impact to traffic from the Proposed Action would be minor.

3.3 REGULATORY RESTRICTIONS

MEPA requires state agencies to evaluate regulatory restrictions to be imposed on private property rights because of actions proposed by state agencies, including alternatives that would reduce, minimize, or eliminate the regulation of private property (Section 75-1-201(1)(b)(iii), MCA). Alternatives and mitigation measures required by federal or state laws and regulations to meet minimum environmental standards, as well as actions proposed by or consented to by the applicant, are not subject to a regulatory restrictions analysis.

No aspect of the alternatives under consideration would restrict the use of private lands or regulate their use beyond the permitting process prescribed by the SDLA. The conditions that would be imposed by DEQ in issuing the license would be designed to ensure conformance of the Proposed Action to minimum environmental standards or to uphold criteria proposed and/or agreed to by TLC during application review. Thus, no further DEQ analysis is required beyond the TLC application review for protection of human health and the environment.

3.4 CUMULATIVE IMPACTS

Cumulative impacts are the collective impacts on the human environment when a specific action is considered in conjunction with other past, present, and future actions by location and type. Cumulative impact analysis under MEPA requires an agency to consider all past and present state and non-state actions. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. Cumulative impact analyses help to determine whether an action, combined with other activities, would result in significant impacts.

The Sites all currently produce canola. The surrounding area consists of agricultural fields and residential homes. The cumulative impacts of the Proposed Action would include limitations on the utilization of the Sites for new agricultural, recreational, and other activities, upheld until the Proposed Action ceases (ARM 17.50.811(4) and (5)).

4. FINDINGS

The depth and breadth of the project are typical of a land application site. DEQ's analysis of potential impacts from the Proposed Action are appropriate for the complexity, environmental sensitivity, degree of uncertainty, and mitigating factors provided by the Septic Rules for each resource considered.

To determine whether preparation of an EIS is necessary, DEQ is required to assess the significance of impacts associated with the Proposed Action. The criteria that DEQ is required to consider in making this determination are set forth in ARM 17.4.608(1)(a) through (g):

(a) The severity, duration, geographic extent, and frequency of occurrence of the impact;

(b) The probability that the impact will occur if the Proposed Action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;

(c) Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;

(d) The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values;

(e) The importance to the state and to society of each environmental resource or value that would be affected;

(f) Any precedent that would be set because of an impact of the Proposed Action that would commit DEQ to future actions with significant impacts or a decision in principle about such future actions; and

(g) Potential conflict with local, state, or federal laws, requirements, or formal plans.

The Site locations are described in *Section 1.4* of this Draft EA. If TLC renews their license and operations follow ARM, land application activities and DEQ site inspections would continue indefinitely. The Sites are not within sage grouse core habitat, general habitat, or connectivity area. They have no special agricultural designation. Operations would not adversely affect any threatened or endangered species.

The Proposed Action is expected to moderately improve soils and vegetation at the Sites, as described in *Section 3.2.2*.

The Proposed Action is not expected to impact surface water resources. Operational standards require all the setback requirements from surface water and prohibition of slopes exceeding 6% are met, as described in *Section 3.2.4.1* of this Draft EA.

Minor impacts to groundwater could occur due to the Proposed Action, as described in *Section 3.2.4.2*. The Sites are within the setback requirements for groundwater supply wells, as described in **Table 2** of this Draft EA. The depth to groundwater is greater than 6-ft as required. Land application at agronomic rates would ensure that no septage could percolate below the surface treatment zone. DEQ would field assess soils at the Sites before their use and adjust application areas as needed. DEQ would also periodically monitor site soils to determine compliance with the

AAR as reported. These mitigating activities would limit the potential for impacts to groundwater at the Sites.

DEQ has not identified any growth-inducing or growth-inhibiting aspects of the Proposed Action. However, access to the parcels on the Site for utilization by human recreation, new crops, and livestock would be limited to meet the regulatory restrictions necessary to protect human health. DEQ's approval is not a decision regarding, in principle, any future actions that DEQ may perform. Furthermore, approval doesn't set any precedent or commit DEQ to any future action. Finally, the Proposed Action does not conflict with any local, state, or federal laws, requirements, or formal plans.

The Proposed Action would meet the requirements of the SDLA, the Clean Air Act of Montana, the Montana Water Quality Act, ARM, and county ordinances. Based on a consideration of the criteria set forth in ARM 17.4.608, DEQ has determined that TLC's proposal to add the Sites to its septic tank pumper license is not predicted to significantly impact the quality of the human environment. Therefore, preparation of an EA is the appropriate level of environmental review under MEPA.

5. OTHER GROUPS OR AGENCIES CONTACTED OR CONTRIBUTING TO THE EA

Gallatin County Environmental Health Department
United States Department of Agriculture
Montana Natural Heritage Program
Montana Department of Environmental Quality
Montana Historical Society State Historic Preservation Office
United States Geological Surveyenvironmental
Montana Bureau of Mines and Geology
US Fish & Wildlife Service
Montana Sage Grouse Habitat Conservation Program
Montana State University Extension Service

6. AUTHORS

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Date: November 25, 2020

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